

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number  
**WO 2005/080359 A1**

(51) International Patent Classification<sup>7</sup>: **C07D 277/46**, 417/12, 231/40, 403/12, 487/08, A61K 31/415, 31/426, 31/427, A61P 3/10

4TG (GB). PIKE, Kurt, Gordon [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB).

(21) International Application Number:  
PCT/GB2005/000545

(74) Agent: **ASTRAZENECA**; Global Intellectual Property, S-151 85 Sodertalje (SE).

(22) International Filing Date: 15 February 2005 (15.02.2005)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0403593.7 18 February 2004 (18.02.2004) GB  
0413386.4 16 June 2004 (16.06.2004) GB  
0423039.7 16 October 2004 (16.10.2004) GB

(71) Applicant (for all designated States except MG, US): **ASTRAZENECA AB** [SE/SE]; S-SE-151 85 Sodertalje (SE).

(71) Applicant (for MG only): **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London, Greater London W1K 1LN (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JOHNSTONE, Craig** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **MCKERRECHER, Darren** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10

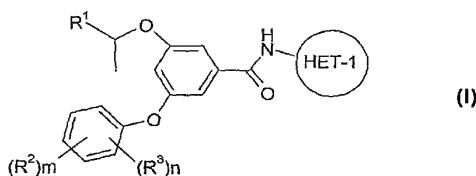
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: BENZAMIDE DERIVATIVES AND THEIR USE AS GLUCOKINASE ACTIVATING AGENTS



WO 2005/080359 A1

(57) Abstract: Compounds of Formula (I): wherein: R<sup>1</sup> is methoxymethyl; R<sup>2</sup> is selected from -C(O)NR<sup>4</sup>R<sup>5</sup>, -SO<sub>2</sub>NR<sup>4</sup>R<sup>5</sup>, -S(O)<sub>p</sub>R<sup>4</sup> and HET-2; HET-1 is a 5- or 6-membered, optionally substituted C-linked heteroaryl ring; HET-2 is a 4-, 5- or 6-membered, C- or N-linked optionally substituted heterocycl ring; R<sup>3</sup> is selected from halo, fluoromethyl, difluoromethyl, trifluoromethyl, methyl, methoxy and cyano; R<sup>4</sup> is selected from for example hydrogen, optionally substituted (1-4C)alkyl and HET-2; R<sup>5</sup> is hydrogen or (1-4C)alkyl; or R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached may form a heterocycl ring system as defined by HET-3; HET-3 is for example an optionally substituted N-linked, 4, 5 or 6 membered, saturated or partially unsaturated heterocycl ring; p is (independently at each occurrence) 0, 1 or 2; m is 0 or 1; n is 0, 1 or 2; provided that when m is 0, then n is 1 or 2; or a salt, pro-drug or solvate thereof, are described. Their use as GLK activators, pharmaceutical compositions containing them, and processes for their preparation are also described.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*